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ABSTRACT

With advances being made in the area of technology and increased emphasis being placed on use of technology in the classroom, teachers and administrators are questioning the effectiveness of technology driven teaching aids. The present issue revolves around whether students' academic performance can be enhanced by using and incorporating technology into the lesson planning and implementation. During a 4-week span, the researcher taught lessons on the Silver-Burdett and Ginn fifth grade social studies curriculum. Two types of lessons were given to two fifth grade classes (n=24 in each class). For two weeks one class was taught using PowerPoint presentations and historical documentaries based on the social studies curriculum, while the other class was taught with traditional methods (lectures, textbooks, and worksheets). The content of the lessons was exactly the same except for the presentation. At the end of two weeks, classes were tested with multiple choice and essay questions. The next two weeks, teaching methods were reversed. Following this 2-week span another test was given. The statistical comparison used to analyze the differences in test scores was a paired sample t-test with scores ranging from 1 to 35. Data revealed no difference at the .05 level of significance. There was no significant difference in test scores between students who were taught using technology based instruction and students who were taught using traditional methods. (Contains a 28-item bibliography. Letters and a form for parents are appended.) (Author/BT)

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A COMPARISON OF FIFTH GRADE CHILDREN RECEIVING BOTH A TRADITIONAL AND A TECHNOLOGY BASED MEANS OF INSTRUCTION IN SOCIAL STUDIES

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An Action Research Project

Presented to the

Department of Teacher Education

Johnson Bible College

In Partial Fulfillment

of the Requirement for the Degree

Master of Arts in Holistic Education

by

Thomas Donald Larson

August 2001

SO 032 949

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APPROVAL PAGE

This action research project completed by Tom Larson is accepted in its present form by the Department of Teacher Education at Johnson Bible College as satisfying the action research project requirements for the degree Master of Arts in Holistic Education.

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ABSTRACT

With the advances being made in the area of technology and increased emphasis being placed on the usage of technology in the classroom, teachers and administrators are questioning the effectiveness of technology driven teaching aids. The present issue revolves around whether student's academic performance can be enhanced by using and incorporating technology into the lesson planning and implementation.

During a four-week span, the researcher taught lessons based on the Silver-Burdett and Ginn fifth grade social studies curriculum. Two types of lessons were given to two different 5th grade classes. For two weeks one class was taught using PowerPoint presentations and historical documentaries based entirely on the social studies curriculum. The other class was taught employing traditional methods, which included listening to lectures, reading the textbook and completing worksheets. The content of the lessons were exactly the same with the only difference being the means by which they were presented. At the end of two weeks, classes were given a test comprising of 25 multiple-choice questions and 1 essay question. The next two weeks, the teaching methods employed in both classes were reversed. The class that had previously been taught using technology-based instruction was now given lessons based upon traditional teaching methods. Likewise, the class that received lessons based on traditional teaching techniques would now receive technology-based classroom instruction. Following this two-week span another test was given. This test was comprised of 25 multiple-choice questions and 1 essay question. The statistical comparison used to analyze the differences in test scores was a paired sample t test with scores ranging from 1 to 35.

The data revealed that no difference was found at the .05 level of significance. There was no significant difference in test scores between students who were taught using technology based instruction and students who were taught using traditional instruction methods.

TABLE OF CONTENTS

	Page
LIST OF TABLES	iv
Chapter	
1. INTRODUCTION	1
Significance of the Problem	1
Statement of the Problem	2
Definition of Terms	3
Limitations	4
Assumptions	4
Hypothesis	4
2. REVIEW OF RELATED LITERATURE	6
Current Research	11
Implications for Teachers	11
3. METHODS AND PROCEDURES	17
Subjects of the Study	17
Test Used	17
Experimental Factor	18
Statistical Analysis	19
4. RESULTS	20
5. SUMMARY, CONCLUSIONS, RECOMMENDATIONS	21
Summary	21
Conclusions	21

Recommendations 22

BIBLIOGRAPHY 24

APPENDICES 27

A. Letter of Approval from Knox County Schools 28

B. Letters to Parents 29

C. Parental Approval Form 30

LIST OF TABLES

Table		Page
1.	Comparison of Post-test Means of Traditionally Instructed and Technology Instructed Groups	20

Chapter 1

INTRODUCTION

Significance of the Problem

In an increasingly technological age where leaps and bounds in the area of technology development and media are occurring everyday, teachers and educators are must begin to ask themselves how this technology will effect education. Technology of one kind or the other has always been used in the educational environment. For years, the printed page, chalk and chalkboard, overhead projectors, filmstrips, 35mm films, and other devices have been used and continue to feature in the teaching and learning process (Duhaney, 2000). While the use of computers and multimedia equipment has been steadfastly infiltrating the classrooms over the past several years, it is only in the classrooms where these technologies are seriously utilized that an immense impact on the educational environment has been made (Perellman, 1992). In his critique of educational technology, L. J. Perellman identified some ways in which information technology has affected the education process. First, he believed that where learning was perceived as a human process, with the new information technology, it has become a transhuman process as people share with increasingly powerful artificial networks and brains. He also believed that where learning was once based in a school classroom, the emergence of new information technology has seen learning permeating every form of social activity of the school, from work to entertainment to home life (Duhaney, 2000). According to the National Survey of Information Technology in U.S. Education, Dr. Kenneth C. Green has concluded that assisting faculty efforts to integrate technology into

instruction remains the most important challenge confronting American educators (Charp, 2000). This study also revealed that the majority of teachers have not made technology integral to their teaching and are not prepared for the changes created by technology integration (Charp, 2000).

Children today live in a multimedia rich environment. The playing of video games, which used to be limited to the arcade, is now available to any child who has a pocket and the financial means by which to afford them. This statement is verified by Sony electronics, which reports that as of March 31, 1999, North American sales totaled 20.62 million 64-bit "Playstation" hardware units and 146 million compatible video games. In addition, Nintendo boasts that over 70 million Gameboys and a total of 283 million games have been sold (Bloomfield, 1999). Movies and music, now being distributed in a variety of different formats, are presently available to children at the mere click of a mouse. With these "multimedia minds" being stimulated everyday by the entertainment industry, educators need to take a serious look at whether or not their methods of teaching are based upon a traditional approach which incorporates very little in the way of visual and auditory stimulation or a technology centered approach which factors into account the significance of the roles that media and information are playing in the minds of today's children.

Statement of the Problem

This study will examine the test results of children who have been instructed using both a traditional approach to teaching, (lecture, handouts, reading) and a

technology centered approach (computer presentations, video). Both methods will be compared and measured in terms of the academic achievements of the students being tested. The problem rests in determining which method of teaching is more effective as measured by student's test scores.

Definition of Terms

Powerpoint Presentation Designed by Microsoft Corporation, this presentation software integrates site and sound and utilizes color and movement into a combined multimedia display.

WWW This abbreviated term stands for the World Wide Web, which is a collection of electronic pages carrying text, pictures, sound and video accessible through computers and viewed though web browsers.

Tradition Based This refers to an educational approach that will rely solely on lectures and worksheets to present and delivery subject matter.

Technology Based This refers to an educational approach, which in this particular study, will rely completely on PowerPoint Presentations and selected video segments of Historical documentaries to convey subject matter.

Video This will refer to video footage from the Founding Father Video series and the American Revolution Video series. Segments of these two documentaries will be shown in class.

Computer Presentation This will refer to any use of the computer utilized as a means of communication between the instructor and the students.

Limitations

The research is limited to only two separate classrooms in one school as the sample. The placements of the subjects have already been determined.

There is no random sample of academic abilities.

The length of the time of the study is limited to a four-week time frame.

Assumptions

It is assumed that today's students who are fed a steady diet of multimedia at home and abroad will benefit from a technology based educational approach. Given the fact that according to the Census Bureau, as of 1993, 31.9 percent of children aged 3-17 had access to home computers and that nearly every one of the nation's 53 million school age children has access to PC and video games according to Eric Newburger of the Census Bureau's Education and Social Stratification Branch (Bloomfield, 1999), it appears necessary to determine whether these same children will most likely benefit from a multimedia/technology enriched educational approach to instruction.

Hypothesis

This research project tested the following hypothesis:

There will be no difference of academic achievement among students who are given technology-based instruction, which incorporates Hypermedia and Historical Video Documentaries, and students being instructed via traditional means which will use strictly lecture and handout based means. A paired sample t-test of statistical significance, which will measure the difference between the means of the scores resulting from a

technology-centered teaching approach and the scores resulting from a tradition-based teaching approach, will be conducted following the retrieval of the data. This will be analyzed testing whether there is significant difference at the .05 level between students.

Chapter 2

REVIEW OF RELATED LITERATURE

Technology is now being widely used in the classroom to enhance and enrich teaching and learning. The availability of new information technology is contributing to many innovations in classroom activities. Strategies/techniques now used to support technology in teaching and learning enables teachers to work collaboratively with students while the students themselves become more immersed in their own learning. Education and training activities are increasingly employing the use of a variety of technologies to support pedagogy and learning. Several of the technologies used are computer based. Graphics and desktop publishing software now allow teachers to develop more instructional materials to their own specifications. Correspondingly, teachers are utilizing testing and measurement software, CD-ROMS, compact disc-interactive (CD-I), DVD, hypertext, hypermedia, and multimedia tools to enhance classroom activities (Duhaney, 2000).

The infusion and integration of the new information technologies in the classroom have had an immense impact on the educational environment. In his critique of educational technology, L.J. Perelmen identified some ways in which educational technologies has affected the education process. First, he believed that where learning was perceived as a human process with the new information technology it has become a transhuman process as people share with increasingly powerful artificial networks and brains. He also believed that where learning was once based in a school classroom, the emergence of new information technology has seen learning permeating every form of

social activity outside of the school, from work to entertainment and home life (Perelmen, 1992).

Lane noted that the use of electronically mediated instruction to duplicate the traditional face-to-face classroom has resulted in a shift from teacher centered to learner-centered classes. In this situation, the responsibility for learning is shifted to the student. The teacher facilitates the learning by acting as a coach, resource guide, and companion in learning. Instructional technology does not only encourage teachers and students to work collaboratively but also results in more cooperative learning activities among the students (Lane, 1994).

Technology use in the classroom should only be considered appropriate if it is used for specific purposed in the teaching and learning process. Its incorporation in this process should not just be an appendage, but as an integral part of the teaching and learning objectives (Duhaney, 2000). Employing technology of any kind in the instructional process becomes valuable only when they are seen merely as elements in a well-constructed learning environment (D'Ignazio, 1989). The use of technology therefore should be driven by clear objectives related to instruction and learning with direct links to the specific curriculum.

As technologies become more prevalent in schools, it is essential that educators harness the capabilities of these technologies to enhance student learning in all subject areas. Integrating technology into the curriculum is not an easy task. It requires knowledge of the subject area, an understanding of how students learn and a level of technical expertise. Recent studies by cognitive psychologists on how students learn

have helped us develop a simple paradigm for using technology to support the learning process (Morgan, 1996).

When students learn, they assimilate new information successfully into their existing cognitive schemata. This process involves relating new information to old information, adapting old schemata to handle the new information and correcting any misconceptions in the existing cognitive schemata. Thus, instruction must be based on what students already know because their existing knowledge will have a considerable impact on what they learn. New information needs to be organized so that it connects to old information in a meaningful way (Thomson, Simonson, & Hargrave 1992). Computers and other technologies can stimulate students to become actively involved in their learning by giving them the tools they need to manipulate their learning environment. Powerful tools are available for teachers to use in creating student-centered, active learning environments in their classrooms (Morgan, 1996).

Modern technology allows computers to generate animation and dynamic illustration that allows learners to mentally construct connection for processing information (Mayer, 1992). The increased incorporation of multimedia elements also permits the design of instructional processes that incorporate unlimited variations and forms of verbal and visual information for presentation (Rieber, 1995). To help students gain the correct concepts, graphics should explicitly identify relevant elements in the teaching process. When instruction illustrations are presented thoroughly, learners using traditional software tend to ignore or forget to read important instructions presented

in textual or other visual display (Jasper, 1991). Good instructional design should invite students to observe and associate from different dimensions (Mann, 1995).

Technology can offset the passive learning environment often associated with economic course-work. Computer-based education that includes instruction using multimedia tools can be incorporated into lectures without difficulty. Techniques using computer graphics, video, sound and the World Wide Web are used to enhance and create course material, schedule, quiz exams and announcements (Stone 1999). The availability of new classroom technologies has presented an array of choices to teachers. However, approaches to implementing these methods have been hampered by both the difficulty of learning and integrating these options and the lack of support materials. One reason is for this is the time and effort required to learn the technologies; a second is the lack of a vision for how these approaches can be integrated with more traditional methods (Becket, 1997). Many classrooms often referred to as "smart" rooms or electronic classrooms are now equipped with a networked computer and LCD projection system, as well as VCRs and laser disk capability. A newer innovation is "smart" boards, whiteboards that can receive computer input. A number of software packages are available for presentations. These fall into two general categories: slide-type (such as Microsoft PowerPoint and Corel Presentations, and interactive ,such as Asymetrix Toolbook and Macromedia Director). Both types of programs enable high quality graphics and some integration of sound and video. Slide-type programs are easer to learn and set up but are essentially linear, in the sense that materials are presented on slides, and it is difficult to move back

and forth between screens and objects that are not immediately ahead or behind the presentation. Interactive programs have a steeper learning curve.

Computer-based lecture methods should be incorporated into courses for a reason. That is, the computer enhancement must be something more than a new toy: it must add a dimension to the class that would otherwise be absent. Otherwise, nothing is gained in a time-consuming exercise. One advantage of computer lecture ware is that the visual aspects can be engaging to students raised in a video world and thus make a traditional lecture less passive. Students tend to see interest in more clearly presented materials, which can thus enhance learning (Stone, 1999).

Although video instruction is a powerful educational tool, which provides students practical and engaging experiences in the classroom, its effectiveness depends upon its pedagogical design and strategic instructional use. In order to utilize the established advantages of video instruction, instructional designers must apply what is known about how people learn to the development of the instructional medium. (Mitchell, 1994). Video-based instruction has the potential to transform the educational delivery system in public education, including bringing down educational costs (Marsh, 1993).

Videotape replay has frequently been analyzed with regards to its effectiveness as a teaching/learning tool. In order to be effective a number of variables must be controlled, the most influential of which is the provision of cues or feedback that will focus the learner's attention on the relevant information (Kernodle, 2000).

When teachers decide to use technology in their own classrooms, they will want to select products and equipment that will enhance the learning goals in ways that are compatible with their philosophy and style of teaching. To put it another way, these technological resources should complement their teaching practice, build on children's varied learning styles, provide additional depth to content mastery, and assist children's knowledge construction (Bergen, 2000).

Integrating technology into the instructional program is seen as important to the teaching/learning environment in order to provide students with meaningful activities. Yet, many teachers have not made technology integral to their teaching and are not prepared for the changes created by technology infusion. Simply integrating technology into the curriculum will not by itself improve academic performance. The need for thoughtful and appropriate selections of how and where technology should be integrated is essential, and the success or failure of technology and its integration into the instructional program is more dependent on human and contextual forces than on hardware, software or connectivity (Charp, 2000).

Current Research

The extravagant claims of the vendors of multimedia applications have raised the expectations of teachers who are searching for ways to improve their classroom performance. These teachers frequently see multimedia resources as a natural way to present material to a generation of students weaned on hours of television.

Educators also assume that the students of today will learn and retain more through visual or computerized instruction, or that students at a minimum, will enjoy their educational experience more if it is enhanced by visual stimulation (Sanchez, 1994).

One major pitfall in this technological approach, however, is the enormous cost of many multimedia applications, especially in times of tight budgetary constraints. Perhaps more importantly, evidence suggests that the use of technology and other innovation in the classroom does not significantly improve student performance (Janda, 1992).

In a small controlled experiment whose purpose was to see whether the use of short video clips in the classroom would enhance student's ability to learn and retain information about some basic concepts in American government, the results were surprising. To determine the effects of the visual stimulus in the video sections, multiple-choice questions addressing the concepts augmented by video were constructed and incorporated into three examinations throughout the study. The result on the first examination showed that there was no difference in performance on test questions that had no video supplementation. These results suggest that all students performed at the same level on questions that were not aided with video clips. However, the second test taken demonstrated that the students receiving video-instruction on average scored 9.3 percentage points higher than the students in the two traditional sections with a significance level of 99.8%. On the final exam it was found that the students exposed to video performed better on test questions. It was revealed that the video students scored 3.1 percentage points higher than the traditional students on the video questions in the final exam. These results were significant at the 95% level, with a probability of .0575.

Findings in this particular study revealed that exposure to video in the classroom may have had only a minor impact on student's abilities to grasp and retain material. Nonetheless an impact was made. Perhaps the most important lesson learned from this experiment is that the use of multimedia technology in the classroom is extraordinarily time consuming (Sanchez, 1994).

In a related study completed by the North Central Regional Laboratory, it was found that technology offers opportunities for learner-control, increased motivation, connections to the real world, and data-driven assessments tied to content standards that, when implemented systemically, enhance student achievement as measured in a variety of ways, including, but not exclusively limited to, standardized achievement tests. It was also shown that generalizing findings from technology research has been difficult because it is a rapidly moving target due to changes in technology and educational vision (Necrel, 2000). The research suggested that computer-based technology could enhance learning. Examined the impact of technology on student learning, (Statham and Torell, 1996) found increased teacher-student interaction, cooperative learning, and, most important, problem solving and inquiry. Technology tools could amplify, extend, and enhance human cognition. They could facilitate access to human, material, and technological resources and help students to store, reshape and analyze information (Jonassen & Reeves, 1996).

Meta-analyses of computer-based instruction and multimedia applications indicate that the effectiveness of educational technology on improving student achievement depends on a match between the goals of instruction, characteristics of the

learners, the design of the software, the technology, and the implementation decisions made by teachers (Sivin-Kachua & Biala, 1993).

There was at least one meta-study of the effectiveness of technology in education. The Software Publishers Association (SPA) commissioned an independent meta-analysis of 176 studies focusing on the effectiveness of technology in schools. This report concludes that the use of technology as a learning tool can make a significant difference in, among other things, student achievement as measured by standardized tests (Sivin-Kachula & Biala, 1996).

Considered as a whole, a number of studies of technology within the context of an instructional framework suggest that technology has a positive impact on student achievement. For example, the Co-NECT Schools have state-of-the-art hardware and software, links to the Internet, and a computer available for every two to four students. In these schools, technology is viewed as a tool that can support learning. Co-NECT Schools have continued to participate in traditional models of testing (i.e., standardized tests) allowing them to be compared to other schools on the basis of nationwide scored on multiple-choice tests. Preliminary evaluation results show that the Co-NECT schools are beginning to show improvement in raising standardized test scores (Goldberg & Richards, 1995).

Both research and the experience of practitioners suggest that, properly implemented, technology can support improved student learning. Most research has dealt with small, individual applications of technology. However, a small proportion of the nations schools have intensively and effectively implemented a variety of educational

technologies in ways that engage and motivate students to achieve performance levels and improvements consistent with the nation's educational goals. The potential for success may be improved because technology is being introduced into schools in a time of broader, systemic reform. The development of clearer and higher standards and associated assessments, a major objective of the systemic reform movement, can sharpen the understanding of a community's goals for education and can sharpen the performance of schools in meeting those goals (Rand, 2000).

Implications for Teachers

The introduction of new information technology in teaching and learning has impacted the traditional classroom activities. The various technologies generate a greater level of interaction between and among teachers and students. They also help to enhance the educational environment while providing enrichment in the learning experience. Employing technology of any kind in the instructional process becomes valuable only when they are seen merely as elements in a well-constructed learning environment (D'Ingnazio, 1989). It is noted that the use of electronically mediated instruction to duplicate the traditional face to face classroom has resulted in a shift from teacher centered to learner-centered classes. In this situation, the responsibility is shifted to the student and the teacher facilitates the learning by acting as a coach, resource guide, and companion in learning (Lane, 1994). The use of technology should be driven by specific objectives related to instruction and learning with direct linkages to the curriculum (Duhaney, 2000).

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The creation of multimedia technological peer education materials should be a part of every teacher's arsenal of tools. Or if this seems too tall an order, they should at least be able to manage lessons using commercially prepared materials. Educators need to adapt to the new world of technology that today's students take for granted. Pressure to bring technology based peer education strategies into the classroom comes from commercial vendors and parents who argue from their different perspectives that this is the wave of the future. Assessments of instructional gains from peer education and technology-based programs support this view (Bloomfield, 1999).

Chapter 3

METHODS AND PROCEDURES

Subjects of the Study

Students in this study are in the fifth grade and between the ages of nine and ten. Subjects will come from two social studies classes with 24 students in each. The majority of these students are white with an approximately equal number of males and females. The school is located in the Southeastern portion of the United States in a primarily middle to upper class community with very strong parental involvement in children's education.

Timeline

The testing timeline covered a four-week span. During this time, students will have forty-five minutes of classroom instruction. This classroom instruction will be held Monday through Thursday with students being tested on the designated material on Fridays.

Test Used

Students will be tested using book tests originating from the Silver, Burdett & Ginn Curriculum. These tests will be comprised of 5 comprehension questions based on a short reading selection, 20 multiple choice questions based on chapter content and one essay question requiring a written response to a text based statement. Tests will be administered on Fridays and will cover one unit of study.

Experimental Factor

Instruction that will incorporate technology will include PowerPoint Presentations designed by the researcher. These presentations will be viewed on a large TV monitor linked directly to a PC located in the classroom. The presentations will include pictures and simulated sound bytes of historical figures, maps of significant places, diagrams of how the various elements in the particular unit of study piece together, and bold, colorful representations incorporating sound and motion of key names and terms. Video clips will include segments taken from The Founding Fathers Video Series by the History Channel. This particular work reveals the personalities behind the legends and offers an intimate take on the pivotal events in the creation of the nation. The other video source will be taken from the American Revolution set by A & E. This particular set includes re-enactments of great battles, period art and artifacts, rare archival material, and contemporary commentary by leading historians.

There are two social studies classes, which will receive the same subject matter each week. The means by which this subject matter is delivered will vary although the content presented will be exactly the same. During the four weeks in which these experiments are conducted, four units of material will be covered. The first week, class A will receive a tradition-based means of instruction, which will use lectures and handouts to present the information. Class B will receive a technology-based presentation, which will include a PowerPoint feature on the material as well as short video segments related directly to the subject matter. At the end of each week the students will be tested based on an already manufactured test by Silver, Burnett and Ginn

Inc. The exact same tests will be given to both classes. These will take place on Fridays. The next week a new unit will be covered and class A will receive a technology-based means of instruction and class B will receive a tradition-based means of instruction. This pattern will be repeated until the four weeks are concluded. After the final week is concluded and the last test administered, the statistical analysis will take place.

Statistical Analysis

A paired sample t-test of statistical significance, which will measure the difference between the means of the scores resulting from a technology, centered teaching approach and the scores resulting from a tradition based teaching approach will be conducted following the retrieval of the data. This will be analyzed testing whether there is significant difference at the .05 level between students.

Chapter 4

RESULTS

A paired sample t test was used which statistically compared the results of two tests. Each class was given two weeks of technology-based instruction, after which a test was given. An additional two weeks of traditional classroom instruction was also given with students taking a test upon completion of the unit. Scores on both tests ranged from 1 to 35. After the experimental (technology-based) lessons were administered and compared with the results of the control (tradition-based) lessons, no difference was found at the .05 level of significance. The researcher retains the stated hypothesis.

TABLE 1

COMPARISON OF POST-TEST MEANS OF TRADITIONALLY INSTRUCTED AND TECHNOLOGY INSTRUCTED GROUPS

Groups	N	Mean	Mean Difference	Std. Error of Means	t ratio	Sig. 2-tailed
Traditional Instruction	47	29.28				
			-1.51	.9897	-1.53	.134*
Technology-based Instruction	47	30.79				

* Not significant

As can be observed from Table 1, there was not a significant difference in student's test scores after receiving lessons that were delivered via technology-based instruction. Using this technology did not make a significant difference in student's ability to recall and retain information.

Chapter 5

SUMMARY, CONCLUSIONS, RECOMMENDATIONS

Summary of Research

At the end of two weeks of control activity where students were taught using traditional means, which included listening to lectures, reading textbooks and completing handouts, a test of 25 multiple-choice items worth 1 point and one essay question worth 10 points, was given. At the and of two weeks of experimental activity where students were taught using technology-based methods, which included viewing selected historical documentaries and PowerPoint Presentations based on unit subject matter, another test of 25 multiple-choice items worth 1 point and one essay question worth 10 points, was given. The study compared the two methods of teaching and investigated whether there would be a significant difference in test scores based on the prescribed methods of instruction.

Conclusions

After a paired sample t-test of statistical significance was administered, it was observed that significant changes between test scores were not observed at the .05 level. While the results of this experiment did not show any significant differences between teaching styles and test scores, it can be stated that students used in this experiment appeared much more enthusiastic about learning when content was delivered via technology-based means. Whether or not students will be able to recall this information remains to be seen.

Possible reasons for no significance in the research could have been quite simply, the physical makeup of the classes. It was interesting to observe minor differences in test scores in one class and major differences in test scores in the other. Consequently when the classes were combined and averaged the differences in test scores between the experimental and control groups were marginal, thus rendering no significant difference.

Another possible reason for no significant difference could have been the fact that one of these classes had the instructor for other subjects and were consequently more in-tuned to the subtleties and variances of this particular teaching style.

Recommendations

Based on this research, instructors who wish to generate more excitement and enthusiasm into their teaching should seriously consider using some form of technology in the classroom. For this reason, it is recommended that classroom teachers enhance their current teaching styles with technology driven lesson delivery. The research did conclude that students did not suffer academically from technology-based instruction. Because of this, it can be recommended that teachers who prefer to instruct by using computers, videos, and multimedia presentations can do so with the knowledge that the potential for student learning will not be adversely effected.

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APPENDICES

KNOX COUNTY SCHOOLS
ANDREW JOHNSON BUILDING

Dr. Charles Q. Lindsey, Superintendent

December 19, 2000

Mr. Tom Larson
522 Bushwood Drive
Knoxville, Tennessee 37918

Dear Mr. Larson:

You are granted permission to contact appropriate building-level administrators concerning the conduct of your proposed research study entitled, "A Comparison of Fifth Grade Children Receiving Both Traditional and Technology Centered Instruction in Social Studies." In the Knox County schools final approval of any research study is contingent upon acceptance by the principal(s) at the site(s) where the study will be conducted.

In all research studies names of individuals, groups, or schools may not appear in the text of the study unless *specific* permission has been granted through this office. The principal researcher is required to furnish this office with one copy of the completed research document.

Good luck with your study. Do not hesitate to contact me if you need further assistance or clarification.

Yours truly,

Samuel E. Bratton, Jr.

Samuel E. Bratton, Jr., Ed.D.
Coordinator of Research and Evaluation
Phone: (865) 594-1740
Fax: (865) 594-1709

Project No. 122

P.O. Box 2188 • 912 South Gay Street • Knoxville, Tennessee 37901-2188 • Telephone (865) 594-1800

August 25, 2000

Dear Parents,

With the increasing popularity and usage of computers in society and abroad there is a growing trend in education that seeks to incorporate technology and multimedia into classroom instruction replacing the traditional means which the educational system has embraced these many years.

As an intern in Mrs. Poppen's classroom I am required to conduct a research project. This project will focus on comparing children's test scores which are based on a traditional based method of teaching (lectures, handouts, reading) to a technology based approach which while covering the same content will do so using computers and videos and will cover the span of a four week period. The goal of this project is to determine whether children learn better if instructed using technology-based means as opposed to traditional based instruction. It is my hypothesis that in this multimedia rich society in which we are living and children are growing up in, students who are exposed to information that stimulates them visually will learn and retain at a faster rate than those who are not.

This research project is dependent upon the data analysis attained by the recorded test scores. I ask for your permission to use this data provided by your child. There will be no personal references to your child or any other in the data analysis.

If you have any questions about this project or the means by which it is being administered please call me at (865) 689-4498 or email me at tomlarson@iol24.com. Thank you for your participation.

Please sign and return the attached permission form.

Thank You,

_____ _____

Vicki Andrews Yvonne Poppen

_____

Tom Larson

Please sign and return as soon as possible.

Thank you,

Tom Larson

I _____ give my child _____ permission to participate in Mrs. Poppen's classroom research.

I _____ do not give my child _____ permission to participate in Mrs. Poppen's classroom research.

Date: